What is claimed is

1. A method for reading an array of detectors contained in a device, the method comprising:

illuminating each of the detectors of the array with a plurality of electromagnetic beams arranged in an array, such that at least one electromagnetic beam illuminates at least one of the detectors of the array; and

sensing the plurality of electromagnetic beams reflected from the detectors.

2. The method according to claim 1, wherein illuminating includes transmitting electromagnetic beams from an array of vertical cavity surface emitting lasers (VCSELs).

3. The method according to claim 1, wherein the detectors are microcantilevers within the device.

4. The method according to claim 1, wherein the device is a microfluidics device.

5. The method according to claim 1, wherein sensing includes using a plurality of position sensing detectors (PSDs).

6. The method according to claim 2, wherein illuminating the detectors is further generating the electromagnetic beams.

7. The method according to claim 6 wherein generating the beams comprises mounting a linear array of VCSELs on a substrate.

8. The method according to claim 7, further comprising placing the microfluidics device at a distance from the array of VCSELs

9. The method according to claim 7, wherein illuminating the detectors further comprises locating a beam splitter between the VCSELs and the detectors.

10. The method according to claim 1, wherein illuminating is providing a wavelength of about 760nm $\pm$ 20nm.

11. The method according to claim 1, further comprising placing a test liquid in the device.

12. The method according to claim 11, wherein the test liquid contains a biological molecule.

13. The method according to claim 12, wherein sensing the beam is detecting binding of the biological molecule to a micro-force enabling composition on a surface of the microcantilever.

14. An apparatus for reading an array of detectors contained in a microfluidics device, the apparatus comprising:

a housing having an opening to receive the microfluidics device;

an array of illuminators positioned in the housing such that each illuminator is configured to illuminate at least one of the detectors in the array of detectors; and

a position-sensing device contained in the housing and positioned to receive at least one electromagnetic beam reflected from the detectors.

15. The apparatus according to claim 14, wherein the illuminators are an array of vertical cavity surface emitting lasers (VCSELs).

16. The apparatus according to claim 14, wherein the detectors are microcantilevers.

17. The apparatus according to claim 15, wherein the microfluidics device is located at a distances from the VCSELs wherein the distance is about 30 mm to about 60 mm.

18. The apparatus according to claim 10, further comprising a beam splitter.

19. The apparatus according to claim 18, wherein a surface of the detectors contain a micro-force enabling composition capable of binding to a biological molecule in a sample.

20. The apparatus according to claim 15, further comprising an array of microlenses located between the VCSELs and the detectors.

21. The apparatus according to claim 15, wherein the array of illuminators comprises at least about 30 illuminators.

22. The apparatus according to claim 15, wherein the array of illuminators comprises at least about 60 illuminators.

23. The apparatus according to claim 16, wherein each VCSEL further comprises an electrical connection.

24. The apparatus according to claim 23, wherein the electrical connection comprises a gold stud bump

25. The apparatus according to claim 23, wherein the electrical connection comprises a wire bond.

26. The apparatus according to claim 17, wherein the PSD comprises at least one photosensitive cell wherein the intensity and location of the beam reflected from the microcantilever indicates an extent of deflection of the microcantilever.

27. An illuminator apparatus which is a micro-optical subassembly for illuminating a plurality of microcantilevers, the apparatus comprising: a means for generating and transmitting a plurality of electro-magnetic beams in a linear array; an electrical power source further having electronics, control, wiring harness and interface connector; a microlens array for focusing the beams to provide a spot of illumination on each microcantilever target, wherein the microcantilever is emplaced so that the beams are reflected from the target; and a housing for the apparatus.

28. The illuminator of claim 27, wherein the microcantilevers are located within a microfluidics device removably positioned within the housing.

29. The illuminator of claim 27, wherein the microcantilevers are configured to contain a microforce-sensing material.

30. The illuminator of claim 29, wherein the microforce is selected from the group consisting of a chemical microforce, a magnetic microforce, a thermal microforce, a piezoelectric microforce, and a piezoresistive microforce.

31. An illuminator for generating an array of electromagnetic beams for reading a plurality of detectors, the illuminator comprising a plurality of vertical cavity surface emitting lasers (VCSELs), a circuit with electronics and control, and a housing.

32. The illuminator according to claim 31, wherein the detectors are microcantilevers.

33. The illuminator according to claim 31, further comprising a beam splitter.

34. The illuminator according to claim 31, wherein the illuminators generate an electromagnetic beam having a wavelength selected from the group of about 670nm ± 20nm, about 760nm ± 20nm, about 850nm± 20nm, about 1200nm ± 20nm, about 1350nm± 20nm, and about 1550nm ± 20nm.

35. The illuminator according to claim 31, wherein the illuminators generate an electromagnetic beam having a wavelength of about 760nm ± 20nm.

36. The illuminator according to claim 31, further comprising an array of microlenses located between the VCSELs and the detectors.

37. The illuminator according to claim 31, wherein the VCSELs are mounted on a thermally and electrically conducting substrate.

38. The illuminator according to claim 37, further comprising a microflex circuit on the substrate. .

39. The illuminator according to claim 38, wherein the microflex circuit is attached to the substrate with an adhesive.

40. The illuminator according to claim 38, wherein the microflex circuit comprises a layer of each of copper, nickel, and gold.

41. The illuminator according to claim 37, wherein a VCSEL array die is mounted on the electrically conducting substrate with a gold alloy or a silver-loaded epoxy.

42. The illuminator according to claim 41, wherein a common VCSEL cathode is in contact with the alloy or the epoxy.

43. The illuminator according to claim 41, wherein the VSCEL array die has output apertures having a diameter from at least about 1.5μm to about 20 μm.

44. The illuminator according to claim 31, wherein the distance from the VCSEL to the microcantilever is about 30 mm.

45. The illuminator according to claim 36, further comprising a micropositioner base.

46. The illuminator according to claim 45, wherein the micropositioner base is mounted on the substrate.

47. The illuminator according to claim 31, further comprising a windowed lid.

48. The illuminator according to claim 47, further comprising a micropositioner screw block mounted on the substrate.

49. The illuminator according to claim 46, further comprising a microlens holder with microlens array.

50. The illuminator according to claim 31, wherein the plurality of VCSELs comprises at least about 20 VCSELs.

51. The illuminator according to claim 31, wherein the plurality of VCSELs comprises at least about 60 VCSELs.